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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,684	09/29/2003	Dana R. Johansen	X-0301	1234

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EXAMINER

SWIATEK, ROBERT P

ART UNIT	PAPER NUMBER
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3643

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/671,684

Applicant(s)

JOHANSEN, DANA R.

Examiner

Robert P. Swiatek

Art Unit

3643

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1,2,8,9,12,13 and 15-28 is/are rejected.
- 7) ☒ Claim(s) 3-7,10,11 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Fahrney (US 2,649,262). The patent to Fahrney discloses a bombing apparatus including an aircraft 3 towing a glider 1 by means of a cable 2. As shown in Figure 2 of Fahrney, when the glider 1 is released from the towing craft, suitable airfoil control elements cause the glider to pitch downwardly toward a target 141—in this instance, a ship—in the field of view of the glider. Actuation of the airfoil control elements of the glider 1 of Fahrney in combination with its descending glide slope cause it to outpace its parent aircraft 3, as shown by the relative positions of the glider 1 and aircraft 3 in Figures 1, 2.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fahrney. While the maximum airspeed of the glider 1 of Fahrney in its dive compared to its airspeed in

Art Unit: 3643

horizontal flight is not given, causing the dive speed to be twice the tow speed would have been obvious to one skilled in the art wishing to increase the glider's impact effects on the target.

Claims 8, 9, 15-17, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Fahrney. After disconnection of the tether 2 between both aircraft 1, 3 of Fahrney and once the glider 1 has overtaken its parent aircraft 3 (as depicted in Figure 2 of Fahrney), it is considered to be at a speed substantially greater than that of craft 3 by virtue of its dive. The airfoil components of glider 3, which are activated to initiate the dive, are considered to accelerate the glider—that is, change its direction—such that it can begin to increase its speed in the dive.

Claims 12, 13, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahrney. With respect to claim 12, while the ratio of glider airspeed to tow aircraft speed is not disclosed in the Fahrney patent, causing the dive speed to be twice the tow speed (as by placing the glider into a steeper dive) would have been obvious to one skilled in the art wishing to increase the glider's impact effects upon the target. Likewise, although the glider 1 of Fahrney lacks a propulsion system, providing it with one would have been obvious to one skilled in the art wishing to increase its maneuverability and range following release from the parent aircraft. Finally, as to claim 22, while the towing aircraft 3 of Fahrney is not supersonic, use of a supersonic craft would have been obvious to one skilled in the art wishing to enable it to return quicker to base after release of the glider (it being recognized that the supersonic capability would not be employed during towing).

Claims 18-20, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahrney in view of Kelly (US 5,626,310). The Fahrney reference does not disclose use of a reel with the towing aircraft 3 for length adjustment and storage of the tether. It would have been

Art Unit: 3643

obvious, however, to employ the reel mechanism of Kelly (see column 7, lines 33, 34, of Kelly) with the Fahrney aircraft 3, in order to minimize overturning moments applied by a loose tether to the towing aircraft. As to claim 26, the airfoil control elements of the glider of Fahrney, activated to initiate the dive, are deemed to constitute "first control elements" to accelerate the glider—that is, to change its direction—such that it can begin to increase its speed in the dive. With regard to claim 28, providing the glider of the combination Fahrney as modified by Kelly with a propulsion means would have been obvious to one skilled in the art wishing to increase its range and maneuverability following release from the parent aircraft.

Claims 23-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Pearson. The Pearson patent discloses a towing vehicle 10 (a space shuttle), a towed vehicle 13 in the form of a lifting body, an interconnecting tether 12, a reel mechanism 11, and a controller 30 for controlling the angle of attack of the lifting body. The lifting body also could be controlled from the vehicle 10 (see column 3, lines 17-21, of Pearson); moreover, tether 12 of Pearson is at least 50 miles in length, as per column 5, lines 25-27, of the patent). Since the body of vehicle 13 of Pearson is configured as an airfoil, the body as a whole is construed as constituting at least one wing. When the shuttle vehicle 10 of Pearson is in the atmosphere on its return trip, it is a *suborbital* vehicle, with the tether and lifting body secured within it. As to claim 24, the tether 12 of Pearson is considered capable of retaining "a launch vehicle accelerating under at least two gravities."

Claims 3-7, 10, 11, 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 3643

Applicant's arguments filed 17 November 2004 have been fully considered but they are not persuasive. Claims 1, 2, 8, 9, 12, 13, 15-28 are not believed allowable for the reasons set forth above.

Summary: Claims 1, 2, 8, 9, 12, 13, 15-28 have been rejected; claims 3-7, 10, 11, 14 have been objected to; claims 29, 30 have been allowed.

RPS: ©703/308-2700
4 February 2005

Robert P. Swiatek
ROBERT P. SWIATEK
PRIMARY EXAMINER
ART UNIT 333 3643